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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,333	02/14/2002	Yonglin Huang	15436249251	8697

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EXAMINER

KANG, JULIANA K

ART UNIT PAPER NUMBER

2874

DATE MAILED: 02/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

KD

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/075,333	HUANG ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Juliana K. Kang	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-62 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/3,18/02; 1/8/03.</u> | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Inventorship***

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 6, 22, 23, 31, 33, 35, 37, 43, 48, 54, and 59 are rejected under 35 U.S.C. 102(b) as being anticipated by Cheng (U.S. Patent 5,657,155).

Regarding claims 1, 31, 33, 37, 43, 48, 54, and 59 Cheng discloses an optical passive device comprising a first fiber coupling (12a) optically coupled to a fiber (14a), a beam splitter (25) optically coupled to the first fiber coupling (12a), wherein the beam splitter/combiner is configured to split the beam of light into a first component of light

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and a second component of light, an isolator (24b) optically coupled to the beam splitter/combiner and a second fiber coupling (12b) optically coupled to a first additional fiber (14b) and a second additional fiber (14c) (see Fig. 4b).

Regarding claims 2 and 6, Cheng discloses that the first fiber coupling (12a) is a GRIN lens configured to collimate the beam of light propagating from the fiber (see column 33-41)

Regarding claims 22 and 23, Cheng discloses that the second fiber coupling (12b) focuses the first and second components of light into the optical fibers (14b, 14c) (see column 4 lines 53-56 and Fig. 4b).

Regarding claim 35, Cheng discloses an amplifier (73)(see Fig. 7).

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title; if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-34 and 37-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pan (U.S. Patent 5,740,288) and further in view of Pan (U.S. Patent 5,208,876).

Regarding claims 1-7, 14-18, 22-24, 28-33, 37-54, 56-59 and 61, Pan '288 discloses an optical device comprising a first fiber coupling (11) optically coupled to a fiber (10), a beam splitter/combiner (24) optically coupled to the first fiber coupling (11),

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wherein the beam splitter/combiner is configured to split the beam of light into a first component of light and a second component of light or to combine a first component of light and a second component of light into the beam of light, and a second fiber coupling (13, 15) optically coupled to a first additional fiber (12) and a second additional fiber (14) (see Fig. 1). However, Pan '288 does not teach an isolator. Pan '288 states that the fiber couplings (11, 13, 15) are GRIN lens/optical fiber subassemblies that are found in U.S. Patent 5,208,876 by the same inventor. Pan '876 teaches an isolator having GRIN lens/optical fiber subassembly with a slant polished and anti-reflection coated optical fiber (see column 4 lines 11-12). It would have been obvious to one with ordinary skill in the art at the time the invention was made to use Pan '876 isolator of GRIN lens/optical fiber subassembly in Pan '288 since Pan '288 explicitly suggest to use the Pan '876 GRIN lens/subassembly (see column 4 lines 10-14). Pan '288 teaches that the device can be either a beam splitter or a beam combiner (see column 7 lines 1-10). Thus, it would have been obvious to one with ordinary skill in the art to switch the direction of the isolator of Pan '288/Pan '876 depending on the direction of the beam to transmit the light in only one direction for the use of the device as either a beam splitter or a beam combiner.

Regarding claims 8-10, 55, 60, and 62, Pan '288 discloses the polarization beam splitter cube formed by two right-angle prisms (see column 3 lines 57-62).

Regarding claims 11 and 12, the first additional fiber (12) receives a S-component beam and the second additional fiber (14) receives a P-component beam (see Fig. 1).

Regarding claims 13, 19 and 20, Pan '876 discloses a Faraday rotator (13) (see column 2 lines 18-20).

Regarding claim 21, Pan '876 discloses about 30dB optical isolation (see column 5 line 66).

Regarding claims 25 and 26, it would have been obvious to one with ordinary skill in the art to use any types of fibers including a single or multi mode fibers in Pan' 288/Pan '876.

Regarding claim 27, Pan '288 discloses using PM fibers (see column 4 lines 35-36).

Regarding claim 34, as described above, Pan '288/Pan '876 teach the optical beam splitter/combiner. However, Pan '288/Pan '876 do not teach that the device is coupled to a laser. It would have been obvious to one with ordinary skill in the art to use a source of light such as a laser to produce a light to transmit to the device.

Regarding claim 36, the device of Pan '288 is used in an optical network (see column 1 lines 13-23).

### ***Conclusion***

6. The prior art documents submitted by applicant have been considered and made of record (note the attached copy of form PTO-1449).

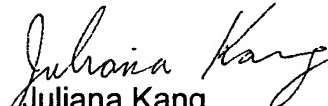
7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Li et al (U.S. Patent 6,493,140 B1) teach polarization splitter and combiner.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juliana K. Kang whose telephone number is (571) 272-2348. The examiner can normally be reached on Mondays and Thursdays 7:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Juliana Kang  
February 7, 2004